

Clouds and the Earth's Radian Energy System (CERES)

Data Management System Operator's Manual

**Synoptic Surface and Atmospheric Radiation Budget (SARB) Subsystem
(Subsystem 7.2)**

CER7.2.1P1

**Release 3
Version 1**

Lisa H. Coleman¹, Tom Caldwell¹

¹Science Applications International Corporation (SAIC)
One Enterprise Parkway, Suite 300
Hampton, VA 23666

NASA Langley Research Center
Radiation Aerosols Branch
Atmospheric Sciences Competency
21 Langley Boulevard
Hampton, VA 23681-2199

SW Delivered to CM: June 2003
Document Date: June 2003

Document Revision Record

The Document Revision Record contains information pertaining to approved document changes. The table lists the date the Software Configuration Change Request (SCCR) was approved, the Release and Version Number, the SCCR number, a short description of the revision, and the revised sections. The document authors are listed on the cover. The Head of the CERES Data Management Team approves or disapproves the requested changes based on recommendations of the Configuration Control Board.

Document Revision Record

SCCR Approval Date	Release/Version Number	SCCR Number	Description of Revision	Section(s) Affected
06/19/03	R3V1	445	<ul style="list-style-type: none">• Initial version of document.• Updated format to comply with standards.	All All

Preface

The Clouds and the Earth's Radiant Energy System (CERES) Data Management System supports the data processing needs of the CERES Science Team research to increase understanding of the Earth's climate and radiant environment. The CERES Data Management Team works with the CERES Science Team to develop the software necessary to support the science algorithms. This software, being developed to operate at the Langley Atmospheric Sciences Data Center (ASDC), produces an extensive set of science data products.

The Data Management System consists of 12 subsystems; each subsystem represents one or more stand-alone executable programs. Each subsystem executes when all of its required input data sets are available and produces one or more archival science products.

This Operator's Manual is written for the data processing operations staff at the Langley ASDC by the Data Management Team responsible for this Subsystem. Each volume describes all Product Generation Executables for a particular subsystem and contains the Runtime Parameters, Production Request Parameters, the required inputs, the steps used to execute, and the expected outputs for each executable included within this Subsystem. In addition, all subsystem error messages and subsequent actions required by the ASDC operations staff are included.

Acknowledgment is given to Joanne Saunders of Science Applications International Corporation (SAIC) for her support in the preparation of this document and to Sandra K. Nolan, SAIC, for structuring the manual guidelines and organization.

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Preface	iii
Introduction	1
Document Overview	1
Subsystem Overview	2
1.0 PGEName: CER7.2.1P1	4
1.1 PGE Details	4
1.1.1 Responsible Persons	4
1.1.2 E-mail Distribution List	4
1.1.3 Parent PGE(s)	4
1.1.4 Target PGE(s)	5
1.2 Operating Environment	5
1.2.1 Runtime Parameters (A List of all Dynamic Parameters needed at Runtime)	5
1.2.2 Environment Script Requirements	6
1.2.3 Execution Frequency	6
1.2.4 Memory/Disk Space/Time Requirements	6
1.2.5 Restrictions Imposed in Processing Order	6
1.3 Processor Dependencies (Previous PGEs, Ingest Data,..)	7
1.3.1 Input Dataset Name (#1): CER_TSIB - Time Space Interpolate	7
1.3.2 Input Dataset Name (#2): CER_MOA - CERES Hourly Meteorological, Ozone, and Aerosol Ancillary Input Data Set	7
1.3.3 Input Dataset Name (#3): MATCH_TERRA_AOTS - Daily MATCH Climatological Aerosol Files	8
1.3.4 Input Dataset Name (#4): Monthly Surface Albedo History File	8
1.3.4.1 Input Dataset Name (#4): CER_HMAER - Interpolated Daily MODIS Aerosol (IMA)	9
1.4 Operating Procedures (Procedure for each part of the processor's elements)	9
1.4.1 How to Generate the ASCII File	9
1.4.2 How to Generate the PCF File	10
1.4.3 How to Execute the Monthly Pre-Processor	10
1.4.4 Special Case Considerations	10
1.4.5 Special Reprocessing Instructions	10
1.5 Execution Evaluation	11
1.5.1 Exit Codes	11
1.5.2 Screen Messages	11

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.5.3 Log and Status Files Results (Include ALL Log Files)	11
1.5.4 Solutions to Possible Problems.....	12
1.5.5 Conditions for Subsystem and/or Target PGE(s) Terminal Failure (Halt all further processing)	12
1.6 Expected Output Dataset(s)	13
1.7 Expected Temporary Files/Directories.	13
References	14
Appendix A Acronyms and Abbreviations	A-1
Appendix B Error Messages for Subsystem 7.2	B-1
B.1 Error Messages for PGE CER7.2.1P1	B-2
Appendix C Sample ASCII (PCFin_ File Listings for Subsystem 7.2	C-1
C.1 Sample ASCII (PCFin) File Listing for CER7.2.1P1	C-1

LIST OF TABLES

<u>Table</u>		<u>Page</u>
Table 0-1.	Synoptic SARB Subsystem Static Ancillary Input Data Files	2
Table 1-1.	Subsystem Software Analysts Contacts	4
Table 1-2.	Parent PGEs for CER7.2.1P1	5
Table 1-3.	Target PGEs after CER7.2.1P1	5
Table 1-4.	Runtime Parameters for CER7.2.1P1	5
Table 1-5.	Exit Codes for CER7.2.1P1	11
Table 1-6.	Expected Output File Listing for CER7.2.1P1	13
Table B-1.	TK (SMF) Utility Message Table for PGE CER7.2.1P1	B-2

Introduction

The Clouds and the Earth's Radiant Energy System (CERES) is a key component of the Earth Observing System (EOS). The CERES instrument provides radiometric measurements of the Earth's atmosphere from three broadband channels: a shortwave channel (0.3 - 5 μm), a total channel (0.3 - 200 μm), and an infrared window channel (8 - 12 μm). The CERES instruments are improved models of the Earth Radiation Budget Experiment (ERBE) scanner instruments, which operated from 1984 through 1990 on the National Aeronautics and Space Administration's (NASA) Earth Radiation Budget Satellite (ERBS) and on the National Oceanic and Atmospheric Administration's (NOAA) operational weather satellites NOAA-9 and NOAA-10. The strategy of flying instruments on Sun-synchronous, polar orbiting satellites, such as NOAA-9 and NOAA-10, simultaneously with instruments on satellites that have precessing orbits in lower inclinations, such as ERBS, was successfully developed in ERBE to reduce time sampling errors. CERES continues that strategy by flying instruments on the polar orbiting EOS platforms simultaneously with an instrument on the Tropical Rainfall Measuring Mission (TRMM) spacecraft, which has an orbital inclination of 35 degrees. In addition, to reduce the uncertainty in data interpretation and to improve the consistency between the cloud parameters and the radiation fields, CERES includes cloud imager data and other atmospheric parameters. The CERES instruments fly on the TRMM spacecraft, on the EOS-AM platforms and on the EOS-PM platforms. The TRMM satellite carries one CERES instrument while the EOS satellites carry two CERES instruments, one operating in a fixed azimuth scanning mode and the other operating in a rotating azimuth scanning mode.

Document Overview

This document, CERES Synoptic Surface and Atmospheric Radiation Budget (SARB) Subsystem 7.2 Release 3 Operator's Manual, is part of the CERES Subsystem 7.2 Release 3 delivery package provided to the Atmospheric Sciences Data Center (ASDC). It provides a description of the CERES Synoptic SARB Subsystem Release 3 Product Generation Executive (PGE) and explains the procedures for executing the software. A description of acronyms and abbreviations is provided in [Appendix A](#), comprehensive lists of messages that can be generated during the execution of PGE CER7.2.1P1 are contained [Appendix B](#), and Sample ASCII (PCFin) File Listings are provided in [Appendix C](#).

This document is organized as follows:

[Introduction](#)

[Document Overview](#)

[Subsystem Overview](#)

[1.0 PGName: CER7.2.1P1](#)

[References](#)

[Appendix A](#) - Acronyms and Abbreviations

[Appendix B](#) - Error Messages for Subsystem 7.2

[Appendix C](#) - Sample ASCII (PCFin) File Listing(s) for Subsystem 7.2

Subsystem Overview

The Synoptic SARB Subsystem software computes longwave, shortwave, and window channel vertical flux profiles that span from the Earth's surface to the Top-of-Atmosphere. These profiles are stored on the Synoptic Intermediate (SYNI) product. Each SYNI contains data from one instrument for one month for a single one-degree latitudinal zone, and directly corresponds to a Time and Space Interpolate Binary (TSIB) product for the same month, instrument, and zone.

CER7.2.1P1 - Synoptic SARB Subsystem Main-Processor

PGE CER7.2.1P1 consists of a Main-Processor. The primary output from the Main-Processor is the SYNI, which serves as input for CERES Subsystem 8.0. An ASCII QC report is also generated.

In addition to the input files listed in the sections that follow, various static ancillary input data files are also required for the Synoptic SARB PGEs to process. The majority of these ancillary input data sets are also accessed by the Instantaneous SARB Subsystem, PGE CER5.1P1. These files are listed in [Table 0-1](#).

Table 0-1. Synoptic SARB Subsystem Static Ancillary Input Data Files (1 of 2)

File Name	Description
\$CERESHOME/sarb/data/ancillary/static/sarb/SS5_DrivTab_19990315	Precomputed derivative table values
\$CERESHOME/sarb/data/ancillary/static/sarbsyn/SigTab_Synoptic_20030530	Precomputed sigma table values for the Synoptic SARB Subsystem only
\$CERESHOME/sarb/data/ancillary/static/sarb/IGBP_Ver3.0	Static, global vegetation/scene-type map index
\$CERESHOME/sarb/data/ancillary/static/sarb/CollinsAer_1998TRMM_Ver3.0 \$CERESHOME/sarb/data/ancillary/static/sarb/match_aot/match_aots_CurrMonth/ MATCH_TERRA_AOTS.CurrDay	Aerosol climatology based on assimilated climatology provided by Bill Collins <i>NOTE: The CollinsAer_1998TRMM_Ver3.0 is a single file containing data for the January-June 1998 time frame. The MATCH_TERRA_AOTS files are daily files that are delivered to the ASDC by the SARB Working Group as they become available. For TRMM data sets for which MATCH data are not available, the ASCII filename generators for PGEs CER5.0P1 and CER5.1P1 intentionally generate a filename for a file that does not exist: CollAer_NonExistFile.</i>

Table 0-1. Synoptic SARB Subsystem Static Ancillary Input Data Files (2 of 2)

File Name	Description
\$CERESHOME/sarb/data/ancillary/static/sarb/ SS5_GFDLAerClim_200006	Geophysical Fluid Dynamics Laboratory (GFDL) Aerosol climatology for time frames not covered by the Collins assimilated aerosol climatology
\$CERESHOME/sarb/data/ancillary/static/sarb/ flsa0602b_lut.2s.coef_20020913	Surface albedo-related coefficients required by the Fu-Liou Radiative Transfer Model
\$CERESHOME/sarb/data/ancillary/static/sarb/ flsa3_lut.4s.coef_19991215	Surface albedo-related coefficients required by the Fu-Liou Radiative Transfer Model
\$CERESHOME/sarb/data/ancillary/static/sarb/ flsa4_lut.2s.coef_19991215	Surface albedo-related coefficients required by the Fu-Liou Radiative Transfer Model
\$CERESHOME/sarb/data/ancillary/static/sarb/ SS5_ZJin_OcnAlb_20011218	Zhonghai Jin ocean spectral albedo lookup table

1.0 PGName: CER7.2.1P1

CER7.2.1P1 - CERES Synoptic Surface and Atmospheric Radiation Budget (SARB) Main-Processor

1.1 PGE Details

1.1.1 Responsible Persons

The Subsystem software analysts responsible for the development of PGE CER7.2.1P1 are listed in [Table 1-1](#).

Table 1-1. Subsystem Software Analysts Contacts

Item	Primary	Alternate
Contact Name	Lisa Coleman	Tom Caldwell
Organization	SAIC	SAIC
Address	1 Enterprise Parkway	1 Enterprise Parkway
City	Hampton	Hampton
State	VA 23666	VA 23666
Phone	(757) 827-4654	(757) 827-4667
Fax	(757) 825-4968	(757) 825-4968
LaRC e-mail	ceresdmt+sarb@larc.nasa.gov	ceresdmt+sarb@larc.nasa.gov

1.1.2 E-mail Distribution List

An E-mail distribution list can be obtained from the primary contact listed in [Table 1-1](#).

1.1.3 Parent PGE(s)

The PGEs listed in [Table 1-2](#) must successfully execute for the specified data set prior to executing PGE CER7.2.1P1.

Table 1-2. Parent PGEs for CER7.2.1P1

PGEName	Description
CER7.1.1P1	Process Time Interpolation and Synoptic Flux Computation
CER12.1P1	Regrid Meteorological, Ozone, and Aerosol (MOA) Subsystem

1.1.4 Target PGE(s)

[Table 1-3](#) lists the PGEs dependent on output from PGE CER7.2.1P1.

Table 1-3. Target PGEs after CER7.2.1P1

PGEName	Description
CER8.1P1	Monthly Regional, Zonal and Global Radiation Fluxes and Cloud Properties

1.2 Operating Environment

1.2.1 Runtime Parameters (A List of all Dynamic Parameters needed at Runtime)

The runtime parameters listed in [Table 1-4](#) are required for the instructions given in the remainder of [Section 1.0](#) to process PGE CER7.2.1P1.

Table 1-4. Runtime Parameters for CER7.2.1P1

Parameter	Description	Data Type	Valid Values
DataMonth	Data Month--yyyymm, where yyyy = four-digit year mm = two-digit month	I(6), where year = (I4.4) month = (I2.2)	>1996 01 .. 12
DataMonthZone	Data Month and zone--yyyymmZNum, where yyyy = four-digit year mm = two-digit month Z = "Z" (constant) Num = Latitudinal zone index	ASCII, where year = (I4.4) month = (I2.2) Z = ASCII Num = (I3.3)	>1996 01 .. 12 Z 001 .. 180
PCFinfile	Name of input file to the PCF generator	ASCII	See Section 1.4
PCFname	Name of PCF file	ASCII	See Section 1.4

1.2.2 Environment Script Requirements

Refer to the CERES internal paper ([Reference 1](#)) for a detailed description of the CERES environment parameters required by the CERES PGEs.

PGE CER7.2.1P1 references the environment variable script, **ENV7.2.1P1-env.csh**, which contains the following parameters:

SS5	- Sampling Strategy for Instantaneous SARB: see Production Request
PS5	- Production Strategy for Instantaneous SARB: see Production Request
CC5	- Configuration Code for Instantaneous SARB: see CM Database
SS7_1	- Sampling Strategy for Time Interpolation: see Production Request
PS7_1	- Production Strategy for Time Interpolation: see Production Request
CC7_1	- Configuration Code for Time Interpolation: see CM Database
SS7_2	- Sampling Strategy for Synoptic SARB: see Production Request
PS7_2	- Production Strategy for Synoptic SARB: see Production Request
CC7_2	- Configuration Code for Synoptic SARB: see CM Database
SW7_2	- SCCR number for current version of Synoptic SARB software: see CM Database
DATA7_2	- SCCR number for current version of Synoptic SARB input data: see CM Database
SS12	- Sampling Strategy for Regrid MOA: see Production Request
PS12	- Production Strategy for Regrid MOA: see Production Request
CC12	- Configuration Code for Regrid MOA: see CM Database

1.2.3 Execution Frequency

CER7.2.1P1 executes once for each one-degree latitudinal zone for each instrument for each month, i.e., CER7.2.1P1 executes 180 times per data month for each instrument.

1.2.4 Memory/Disk Space/Time Requirements

Memory:	50928 K
Disk Space:	6600 MB
Total Run Time:	7:22:55.61

1.2.5 Restrictions Imposed in Processing Order

A zone may be processed at any time, providing that the appropriate TSIB input file has been produced. There are no restrictions imposed on the ordering of the zones. Should there be multiple months that are ready for processing through PGE CER7.2.1P1, there are no restrictions imposed on the ordering of the months.

1.3 Processor Dependencies (Previous PGEs, Ingest Data,..)

This section describes the nonancillary input files that are required for PGE CER7.2.1P1 processing. See [Section 1.2](#) for variable information contained in the listed filenames.

1.3.1 Input Dataset Name (#1): CER_TSIB - Time Space Interpolate

- a. Directory Location/Inputs Expected (Including .met files, header files, etc.):

**\$CERESHOME/tisa_avg/data/data_7/out_comp/
CER_TSIB_\${SS7_1}_\${PS7_1}_\${CC7_1}.\${DataMonthZone}**

1. Mandatory/optional: **Mandatory**
2. Time Related Dependency: **Input file must be for same month and zone to be processed.**
3. Waiting Period: **As soon as available.**

- b. Source of Information (Source is PGE name or Ingest Source): **PGE CER7.1.1P1**

- c. Alternate Data Set, if one exists (maximum waiting period): **NONE**

- d. File Disposition after successful execution: **Remove if all other dependent PGEs have processed.**

- e. Typical file size (MB): **298**

1.3.2 Input Dataset Name (#2): CER_MOA - CERES Hourly Meteorological, Ozone, and Aerosol Ancillary Input Data Set

- a. Directory Location/Inputs Expected (Including .met files, Header files, etc.)

\$CERESHOME/sarb/data/out_comp/data/regridmoa

CER_MOA_\${SS12}_\${PS12}_\${CC12}.\${DataMonth\$dd\$hh}

where \$dd= 01 .. 31
 \$hh = 00, 06, 12, 18

and

CER_MOA_\${SS12}_\${PS12}_\${CC12}.\$NextDataMonth"0100"

where **\$NextDataMonth** is the data month immediately following **\$DataMonth**

1. Mandatory/optional: **Mandatory.**
2. Time Related Dependency: **Input files must be for same data month to be processed.**

3. Waiting Period: **As soon as all MOA files for the month are available.**
- b. Source of Information (Source PGE name or Ingest Source):
PGE CER12.1P1
- c. Alternate Data Set, if one exists (maximum waiting period): **NONE**
- d. File Disposition after successful execution: **Remove if all other dependent PGEs have processed.**
- e. Typical file size (MB): **13.31**

1.3.3 Input Dataset Name (#3): MATCH_TERRA_AOTS - Daily MATCH Climatological Aerosol Files

- a. Directory Location/Inputs Expected (Including .met files, header files, etc.):
\$CERESHOME/sarb/data/ancillary/static/sarb/match_aot/match_aots_\${DataMonth}/MATCH_TERRA_AOTS.\$dd
where \$dd= 01 .. 31
 1. Mandatory/optional: **This file is mandatory if available for Terra data sets. (**If not available for a Terra data set, contact responsible persons listed in [Table 1-1](#) to determine whether or not to process without these files.**)** These files are not available for TRMM data sets.
 2. Time Related Dependency: **Input file must be for same month to be processed.**
 3. Waiting Period: **As soon as available**
- b. Source of Information (Source is PGE name or Ingest Source):
Provided by responsible persons listed in [Table 1-1](#), using the CM delivery process
- c. Alternate Data Set, if one exists (maximum waiting period): **NONE**
- d. File Disposition after successful execution: **Remove.**
- e. Typical file size (MB): **0.38**

1.3.4 Input Dataset Name (#4): Monthly Surface Albedo History File

- a. Directory Location/Inputs Expected
\$CERESHOME/sarb/data/ancillary/dynamic/sarb/CER_HMPSAL_\${SS5}_\${PS5}_\${CC5}.\${DataMonth}
 1. Mandatory/optional: **Mandatory**
 2. Time Related Dependency: **Input file must be for the same month as data being processed.**

3. Waiting Period: **As soon as available**
- b. Source of Information (Source PGE name or Ingest Source):
PGE CER 5.0P1
- c. Alternate Data Set, if one exists (maximum waiting period): **NONE**
- d. File Disposition after successful execution: **Remove.**
- e. Typical file size (MB): **4.66 MB**

1.3.4.1 Input Dataset Name (#4): CER_HMAER - Interpolated Daily MODIS Aerosol (IMA)

- a. Directory Location/Inputs Expected

**\$CERESHOME/sarb/data/ancillary/dynamic/sarb/
CER_HMAER_\${SS5}_\${PS5}_\${CC5}.\${DataMonth}**

1. Mandatory/optional: **This file is mandatory for Terra data sets. This file is not available for TRMM data sets.**
2. Time Related Dependency: **Input file must be for the same month and instrument as data being processed.**
3. Waiting Period: **As soon as available**

- b. Source of Information (Source PGE name or Ingest Source):

PGE CER 5.0P1

- c. Alternate Data Set, if one exists (maximum waiting period): **NONE**
- d. File Disposition after successful execution: **Remove.**
- e. Typical file size (MB): **61.30**

1.4 Operating Procedures (Procedure for each part of the processor's elements)

The Synoptic SARB Subsystem Main-Processor production script, runsarbsyn, references a Process Control File (PCF) which contains the correct file names and paths for the PGE. This PCF is created by first executing an ASCII file generator, ascii_gen_7.2.1P1, and then executing the PCF generator, pcfgen_7.2.1P1.

1.4.1 How to Generate the ASCII File

The ASCII file name generator requires one command-line argument, \$DataMonthZone, as defined in [Table 1-4](#).

At the command-line (denoted by “>”) type:

```
> cd $CERESHOME/sarb/bin/sarbsyn  
> ascii_gen_7.2.1P1 $DataMonthZone
```

The following file will be generated in \$CERESHOME/sarb/rcf/PCFgen/sarbsyn/:

CER7.2.1P1_PCFin_SS7_2_PS7_25_CC7_2.\$DataMonthZone

1.4.2 How to Generate the PCF File

The PCF generator, pcfgen_7.2.1P1, is executed using the newly created ASCII input file name as a command-line argument. See [Section 1.2](#) for variable information.

At the command-line (denoted by “>”) type:

```
> cd $CERESHOME/sarb/bin/sarbsyn  
> pcfgen_7.2.1P1 CER7.2.1P1_PCFin_SS7_2_PS7_25_CC7_2.$DataMonthZone
```

The following PCF will be generated in \$CERESHOME/sarb/rcf/pcf/sarbsyn/:

CER7.2.1P1_PCF_SS7_2_PS7_25_CC7_2.\$DataMonthZone

1.4.3 How to Execute the Monthly Pre-Processor

Execute the production script by typing the script name, runsarbsyn, followed by a string which designates the name of the required PCF file. See [Section 1.2](#) for variable information.

At the command-line (denoted by “>”) type:

```
> cd $CERESHOME/sarb/bin/sarbsyn  
> runsarbsyn CER7.2.1P1_PCF_SS7_2_PS7_25_CC7_2.$DataMonthZone
```

1.4.4 Special Case Considerations

N/A, at this time. Special case considerations will be handled on a case-by-case basis, where special instructions will accompany each special request.

1.4.5 Special Reprocessing Instructions

All output files are opened with Status = NEW in CER7.2.1P1 software. These files must be removed before reprocessing.

At the command-line (denoted by “>”) type:

```
> cd $CERESHOME/sarb/bin/sarbsyn  
> rm_script_7.2.1P1 CER7.2.1P1_PCF_SS7_2_PS7_2_CC7_2.$DataMonthZone
```

The script, rm_script_7.2.1P1, removes all files generated by the ASCII file name and PCF generators, along with files generated during the execution of runsarbsyn.

1.5 Execution Evaluation

1.5.1 Exit Codes

The PGE CER7.2.1P1 terminates using the CERES-defined EXIT CODES for the Langley TRMM Information System (LaTIS) as seen in [Table 1-5](#). Other exit codes may appear from the program, which may be the result of a system, compiler, or Toolkit-related error. In these cases, contact the responsible person (see [Table 1-1](#)) for assistance.

Table 1-5. Exit Codes for CER7.2.1P1

Exit Code	Definition	Action
0	Normal Exit	Proceed normally
203	Failure	Check the Log Files and take the appropriate action (see Appendix B)

1.5.2 Screen Messages

When running the production script, runsarbsyn, the system message, “No match,” may be written to the screen. This message occurs when the scripts try to remove an old output file that does not exist. This does not signify a problem.

1.5.3 Log and Status Files Results (Include ALL Log Files)

The Log files contain all error and/or status messages produced by the PGE. The files are located in directory: **\$CERESHOME/sarb/data/runlogs/sarbsyn**. See [Section 1.2](#) for information on variable fields within the file names.

1. Report Log File: CER7.2.1P1_LogReport_SS7_2_PS7_2_CC7_2.\$DataMonthZone

The Report Log File contains the Synoptic SARB-related messages. These messages may be strictly informative (Error Type = Notice or Warning) or may indicate a fatal condition that results in premature PGE termination (Error Type = Error). A comprehensive list of these messages, that can be generated during the execution of the PGE, is given in [Table B-1](#).

2. Status Log File: CER7.2.1P1_LogStatus_SS7_2_PS7_2_CC7_2.\$DataMonthZone

The Status Log File contains all messages created by the Toolkit. If an abnormal exit is encountered by the PGE, this file should be examined for '_F_', fatal message type. The responsible person should be advised.

3. User Log File: CER7.2.1P1_LogUser_SS7_2_PS7_2_CC7_2.\$DataMonthZone

The User Log File is not used at this time, but exists to satisfy the Toolkit requirements. Typically the _U_ and _N_ (User information and Notice) will be written to User Log File and Status Log File.

1.5.4 Solutions to Possible Problems

As mentioned in [Section 1.4.5](#), all output files are opened with Status = NEW in the PGE CER7.2.1P1 software. These files must be removed before reprocessing.

1.5.5 Conditions for Subsystem and/or Target PGE(s) Terminal Failure (Halt all further processing)**a. Subsystem Termination**

If the exit code indicates failure, halt all further Target PGE processing.

b. Target PGE Termination

If any of the **.met** files are missing from the expected output, this condition must terminate all further Target PGE processing.

1.6 Expected Output Dataset(s)

The expected output datasets for each instance of the PGE are listed in [Table 1-6](#). This PGE is expected to process 180 times per month per instrument.

Table 1-6. Expected Output File Listing for CER7.2.1P1

File Name ^a /Directory	m/o	File Size (MB)	Freq/ PGE	Target PGE	Destination ^b
CER7.2.1P1_PCF__\$SS7_2__\$PS7_2__\$CC7_2.\$DataMonthZone ^c @(\$CERESHOME/sarb/rcfpcf/sarbsyn)	m	0.02	180/ month	N/A	Archive, rm
CER7.2.1P1_PCFin__\$SS7_2__\$PS7_2__\$CC7_2.\$DataMonthZone ^c @(\$CERESHOME/sarb/rcf/PCFgen/sarbsyn)	m	0.01	180/ month	N/A	Archive, rm
CER7.2.1P1_LogReport__\$SS7_2__\$PS7_2__\$CC7_2.\$DataMonth- Zone ^c @(\$CERESHOME/sarb/data/runlogs/sarbsyn)	m	x	180/ month	N/A	Archive, rm
CER7.2.1P1_LogStatus__\$SS7_2__\$PS7_2__\$CC7_2.\$DataMonth- Zone ^c @(\$CERESHOME/sarb/data/runlogs/sarbsyn)	m	x	180/ month	N/A	Archive, rm
CER7.2.1P1_LogUser__\$SS7_2__\$PS7_2__\$CC7_2.\$DataMonth- Zone ^c @(\$CERESHOME/sarb/data/runlogs/sarbsyn)	m	x	180/ month	N/A	Archive, rm
CER_SYN1__\$SS7_2__\$PS7_2__\$CC7_2.\$DataMonthZone ^c (.met) @(\$CERESHOME/sarb/data/out_comp/data/sarbsyn)	m	601.8	180/ month	CER8.1P1	Archive, rm
CER_KQCR__\$SS7_2__\$PS7_2__\$CC7_2.\$DataMonthZone ^c (.met) @(\$CERESHOME/sarb/data/out_comp/qa_reports/sarbsyn)	m	0.01	180/ month	NONE	Archive, rm

a. See [Section 1.2](#) for information on variable data values

If “(.met)” is written next to an expected output filename, then the metadata file **must** exist with the identical filename and .met extension

b. DB - File content is to be entered into the LaTIS Database

/QA - File is to be written to the DAAC designated /QA directory

rm - remove

m - mandatory output

o - optional output

EOD - End of data month

c. DataMonthZone - Data Month and zone (yyyymmZnum), where
yyyy = four-digit year, mm = two-digit month, Z = "Z" (constant), and num = 3-digit latitudinal zone index
example: 199807Z090 = July 1998, Zone 90

1.7 Expected Temporary Files/Directories.

There are no temporary files or directories generated by PGE7.2.1P1.

References

1. CERES Internal Paper, "Proposal for Semi-Automated Sampling Strategy, Production Strategy, and Configuration Code Implementation." URL:http://asd-www.larc.nasa.gov/ceres/intern_doc/

Appendix A Acronyms and Abbreviations

ASDC	Atmospheric Sciences Data Center
CERES	Clouds and the Earth's Radiant Energy System
DAAC	Distributed Active Archive Center
EOS	Earth Observing System
EOS-AM	EOS Morning Crossing Mission
EOS-PM	EOS Afternoon Crossing Mission
ERBE	Earth Radiation Budget Experiment
ERBS	Earth Radiation Budget Satellite
GFDL	Geophysical Fluid Dynamics Laboratory
GSFC	Goddard Space Flight Center
IMA	Interpolated Daily MODIS Aerosol
LaTIS	Langley TRMM Information System
MB	Megabytes
met	metadata file
μm	microns
MOA	Meteorological, Ozone, and Aerosol
MODIS	Moderate Resolution Imaging Spectrometer
N/A	Not Applicable
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
PCF	Process Control File
PGE	Product Generation Executives
QC	Quality Control
SAH	Surface Albedo History
SAIC	Science Applications International Corporation
SARB	Surface and Atmospheric Radiation Budget
SMF	Status Message File
SSF	Single Satellite CERES Footprint TOA and Surface Fluxes, Clouds
SYNI	Synoptic Intermediate Product
TOA	Top-of-Atmosphere
TRMM	Tropical Rainfall Measuring Mission
TSI	Time Space Interpolate product
VD	Validation Days

Appendix B Error Messages for Subsystem 7.2

Appendix B contains a comprehensive list of messages that can be generated during the execution of PGE CER7.2.1P1. These messages are used to inform the operator or analyst of specific circumstances encountered during data processing. These messages may be strictly informative (Error Type = Notice or Warning), or may indicate a fatal condition that results in premature PGE termination (Error Type = Error). All messages are written to the LogReport file and/or the LogStatus File of the processing instance.

Table B-1 contains a list of the diagnostic messages for PGE CER7.2.1P1. Each table entry includes the message pneumatic, a brief description of the error, and the recommended action that should be taken when the message is encountered. The message pneumatic indicates the error type.

NOTE: Some messages may be generated from any one of multiple origins within the software. Instead of repeating the messages for each possible origin, these messages are simply preceded with “_____(),” and are located last in the table.

Operator Instructions:

If a PGE prematurely terminates, then take the following steps:

1. Look at the last few records on the LogStatus file.
2. Find the error message in the following Error Message listing(s), and follow the appropriate ACTION.

ACTION CODE = 1 ; Verify that file exists
= 2 ; Verify that the file size is correct
= 3 ; Check the ASCII input file and PCF file for correctness
= 4 ; No Action, call the Responsible Person in [Table 1-1](#) for PGE CER7.2.1P1
= 5 ; No Action, the PGE's QC report notifies the responsible person

3. If an error message is not in the LogStatus File, then repeat steps 1 and 2 using the LogReport File.
4. If no information is derived, then call the responsible person (see ACTION CODE 4).
5. If the appropriate ACTION failed, then call the responsible person (see ACTION CODE 4).
6. In all cases, log all steps that were taken after the PGE failure, and send a copy to the responsible person (see ACTION CODE 4).

B.1 Error Messages for PGE CER7.2.1P1

Table B-1. TK (SMF) Utility Message Table for PGE CER7.2.1P1 (1 of 6)

Error Message/Description	Action Code
(): ERROR ... Determining if file exists Error encountered determining whether or not a file exists	3
(): ERROR ... Failure closing file Error encountered closing a file	4
(): ERROR ... Failure opening file Error encountered opening a file	3
(): ERROR ... Missing Day run-time LID Retrieval of day run-time parameter requested, but no LID provided	4
(): ERROR ... Missing Hour run-time LID Retrieval of hour run-time parameter requested, but no LID provided	4
(): ERROR ... Missing Month run-time LID Retrieval of month run-time parameter requested, but no LID provided	4
(): ERROR ... Missing Year run-time LID Retrieval of year run-time parameter requested, but no LID provided	4
(): ERROR ... No DA file record length No record length provided for opening a direct access file	4
(): ERROR ... Retrieving Day PCF run-time Error encountered retrieving day from PCF	3
(): ERROR ... Retrieving file name Error encountered retrieving filename from PCF	3
(): ERROR ... Retrieving Hour PCF run-time Error encountered retrieving hour from PCF	3
(): ERROR ... Retrieving Month PCF run-time Error encountered retrieving month from PCF	3
(): ERROR ... Retrieving Year PCF run-time Error encountered retrieving year from PCF	3
AerClim_OpenDrive (): Error ... Could not read MATCH data Error retrieving Collins aerosol climatology static ancillary input data filename from PCF; PCF logic ID # 4	1,3
AerClim_OpenDrive (): Error ... Could not retrieve filename Error retrieving Collins aerosol climatology static ancillary input data filename from PCF; PCF logic ID # 4	3

Table B-1. TK (SMF) Utility Message Table for PGE CER7.2.1P1 (2 of 6)

Error Message/Description	Action Code
AerClim_OpenDrive (): Error ... Determining existence of Aer file Error determining the existence of the Collins aerosol climatology static ancillary input data file; PCF logic ID # 4	3
Close_Syn_IO (): ERROR ... Unable to write SYNI header record Error writing header record to the SYNI output file	4
DataDate_Retrieve (): Error ... Retrieval of Month from PCF Error retrieving the data month from the PCF; PCF logic ID # 145	3
DataDate_Retrieve (): Error ... Retrieval of Year from PCF Error retrieving the data year from the PCF; PCF logic ID # 144	3
Deriv_Init(): Error ... Unable to open DrivTab file Error opening derivative table input file; PCF logic ID # 1	1
dt_load(): Error ... bt read error Error reading the derivative tables from the static ancillary file; PCF logic ID # 1	2,3
dt_load(): Error ... ntbl is greater than maxsubtab Error reading the number of derivative tables from static ancillary file; PCF logic ID # 1	2,3
dt_load(): Error ... ntbl read error Error reading the derivative tables from the static ancillary file; PCF logic ID # 1	2,3
dt_load(): Error ... nword read error Error reading the sizes of the derivative tables from static ancillary file; PCF logic ID # 1	2,3
dt_tune_mem(): Warning ... Error in cloud fractional area adjustment Error encountered in constraint algorithm for indicated FOV. Store values from initial pass on output. Processing for current hour continues with next FOV.	5
FLSA_LUT_Ingest (): Error ... Cannot close FLSALUT file Cannot close Fu-Liou Surface Albedo Lookup table input file; PCF logic ID # 18	2,3
FLSA_LUT_Ingest (): Error ... Cannot open FLSALUT file Cannot open Fu-Liou Surface Albedo Lookup table input file; PCF logic ID # 18	1,3
FLSA_LUT_Ingest (): Error ... Cannot read FLSALUT file Cannot read Fu-Liou Surface Albedo Lookup table input file; PCF logic ID # 18	2,3
FluxRange_Check(): Warning ... Constr Dir/Diff Invalid Invalid direct/diffuse ratio value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Constr Dn LW Clr Invalid Invalid LW downwards clear sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Constr Dn LW Tot Invalid Invalid LW downwards total sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5

Table B-1. TK (SMF) Utility Message Table for PGE CER7.2.1P1 (3 of 6)

Error Message/Description	Action Code
FluxRange_Check(): Warning ... Constr Dn SW Clr Invalid Invalid SW downwards clear sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Constr Dn SW Tot Invalid Invalid SW downwards total sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Constr Up LW Clr Invalid Invalid LW upwards clear sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Constr Up LW Tot Invalid Invalid LW upwards total sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Constr Up SW Clr Invalid Invalid SW upwards clear sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Constr Up SW Tot Invalid Invalid SW upwards total sky flux profile value from constrained pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Init Dir/Diff Invalid Invalid direct/diffuse ratio value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Initial Dn LW Clr Invalid Invalid LW downwards clear sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Initial Dn LW Tot Invalid Invalid LW downwards total sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Initial Dn SW Clr Invalid Invalid SW downwards clear sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Initial Dn SW Tot Invalid Invalid SW downwards total sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Initial Up LW Clr Invalid Invalid LW upwards clear sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Initial Up LW Tot Invalid Invalid LW upwards total sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5

Table B-1. TK (SMF) Utility Message Table for PGE CER7.2.1P1 (4 of 6)

Error Message/Description	Action Code
FluxRange_Check(): Warning ... Initial Up SW Clr Invalid Invalid SW upwards clear sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
FluxRange_Check(): Warning ... Initial Up SW Tot Invalid Invalid SW upwards total sky flux profile value from initial pass for indicated FOV. Processing for current hour continues with next FOV.	5
IGBP_Ingest (): Error ... Cannot close IGBP file Error closing IGBP ancillary input data file; PCF logic ID # 13	2,3
IGBP_Ingest (): Error ... Cannot open IGBP file Error opening IGBP ancillary input data file; PCF logic ID # 13	1,3
IGBP_Ingest (): Error ... Cannot read IGBP file Error reading IGBP ancillary input data file; PCF logic ID # 13	2,3
LUDCOMP(): Warning ... Matrix is singular Error encountered in constraint algorithm for indicated FOV. Store values from initial pass on output. Processing for current hour continues with next FOV.	5
MonSA_Ingest (): Error ... Cannot close monthly SA file Error closing Monthly Surface Albedo History ancillary input data file; PCF logic ID # 17	2,3
MonSA_Ingest (): Error ... Cannot open monthly SA file Error opening Monthly Surface Albedo History ancillary input data file; PCF logic ID # 17	1,3
MonSA_Ingest (): Error ... Cannot read monthly SA file Error reading Monthly Surface Albedo History ancillary input data file; PCF logic ID # 17	2,3
MonSA_Output (): Error ... Cannot close monthly SA file Error closing Monthly Surface Albedo History output data file; PCF logic ID # 17	2,3
MonSA_Output (): Error ... Cannot open monthly SA file Error opening Monthly Surface Albedo History output data file; PCF logic ID # 17	1,3
QC5_Close(): Error ... QC report close failed Error closing Instantaneous SARB QC Report output file; PCF Logic ID # 57	4
QC5_Open(): Error ... QC report open failed Error opening Instantaneous SARB QC Report output file; PCF Logic ID # 57	3
ReadTSI_Data(): Error ... Unable to read TSI file Error encountered reading record from TSI file	1, 3
SfcAlb_Drv(): Warning ... Sbr. SfcAlb_Drv -- Invalid CERES scene id Invalid CERES scene type value for indicated FOV. Processing for current hour continues with next FOV.	5
st_get_nl(): Warning ... Sbr. st_get_nl -- Sigma table maxtune Unable to retrieve correct sigma table value. Value for iav (1,ia) exceeds value for maxtune parameter for indicated FOV. Processing for current hour continues with next FOV.	5

Table B-1. TK (SMF) Utility Message Table for PGE CER7.2.1P1 (5 of 6)

Error Message/Description	Action Code
st_get_nl(): Warning ... Sbr. st_get_nl -- Sigma table mcldc Unable to retrieve correct sigma table value. Value for iav (2,ia) exceeds value for mcldc parameter for indicated FOV. Processing for current hour continues with next FOV.	5
st_get_nl(): Warning ... Sbr. st_get_nl -- Sigma table nsid Unable to retrieve correct sigma table value. Value for iav (3,ia) exceeds value for nsid parameter for indicated FOV. Processing for current hour continues with next FOV.	5
st_load(): Error ... NCASE is greater than MCASE Invalid value of either NCASE or MCASE parameters in the static ancillary input data file; PCF logic ID # 2	2,3
st_load(): Error ... NSID is greater than MSID Invalid value of either NSID or MSID parameters in the static ancillary input data file; PCF logic ID # 2	2,3
st_load(): Error ... Sigma LUT pointer out of range Error encountered in constraintment algorithm for indicated FOV. Store values from initial pass on output. Processing for current hour continues with next FOV.	5
st_load(): Error ... Unable to read namelist ST_CASE Unable to read namelist ST_CASE from the static ancillary input data file; PCF logic ID # 2	2,3
st_load(): Error ... Unable to read namelist ST_SIGF Unable to read namelist ST_SIGF from the static ancillary input data file; PCF logic ID # 2	2,3
st_load(): Error ... Unable to read namelist ST_SIGV Unable to read namelist ST_SIGV from the static ancillary input data file; PCF logic ID # 2	2,3
st_load(): Error ... Unable to read namelist ST_VERS Error reading sigma table-static ancillary input data file version number; PCF logic ID # 2	2,3
st_load(): Error ... Unable to read sigma table parameters Error reading sigma table-static ancillary input data file; PCF logic ID # 2	2,3
SynSARB_Meta_Drv (): Error ... Write fail on SYNI metadata Error writing metadata file for the SYNI product	4
SynSARB_Meta_Drv ():Error ... Write fail on Syn SARB QC metadata Error writing metadata file for the Synoptic SARB QC Report output file	4
tridag(): Warning ... Sbr. tridag, Constr -- Pause 1 Invalid value encountered for indicated FOV in radiative transfer model at first Fu-Liou PAUSE during the constrained pass. Processing for current hour continues with next FOV.	5
tridag(): Warning ... Sbr. tridag, Constr -- Pause 2 Invalid value encountered for indicated FOV in radiative transfer model at second Fu-Liou PAUSE during the constrained pass. Processing for current hour continues with next FOV.	5
tridag(): Warning ... Sbr. tridag, Initial -- Pause 1 Invalid value encountered for indicated FOV in radiative transfer model at first Fu-Liou PAUSE during the initial pass. Processing for current hour continues with next FOV.	5

Table B-1. TK (SMF) Utility Message Table for PGE CER7.2.1P1 (6 of 6)

Error Message/Description	Action Code
tridag(): Warning ... Sbr. tridag, Initial -- Pause 2 Invalid value encountered for indicated FOV in radiative transfer model at second Fu-Liou PAUSE during the initial pass. Processing for current hour continues with next FOV.	5
Tune_Drv(): Warning ... Aerosol Optical Depth Out Of Range Adjusted aerosol optical depth value out-of-range for indicated FOV. Store values from initial pass on output. Processing for current hour continues with next FOV.	5
tune_xxx(): Warning ... Adjusted cloud fractional area out of range Error encountered in constraint algorithm for indicated FOV. Store values from initial pass on output. Processing for current hour continues with next FOV.	5
tune_xxx(): Warning ... Tunexxx is in error Error encountered in constraint algorithm for indicated FOV. Store values from initial pass on output. Processing for current hour continues with next FOV.	5

Appendix C

Sample ASCII (PCFin) File Listings for Subsystem 7.2

C.1 Sample ASCII (PCFin) File Listing for CER7.2.1P1

```
samantha2 139% cat CER7.2.1P1_PCFin_TRMM-PFM-VIRS_SSIT_000000.199807Z090
```

```
#####
# CERES baseline Metadata
#####
PGEName = CER7.2.1P1
SamplingStrategy = TRMM-PFM-VIRS
ProductionStrategy = SSIT
CERDataDateYear = 1998
CERDataDateMonth = 07
TSIzone = Z090
ConfigurationCode = 000000
SWsccr = 445
DATAscr = 445
Sat_name = TRMM
Inst_name = PFM
Imag_name = VIRS

#####
# PGE specific runtime parameters
#####
Satellite_Instrument = TRMM-PFM-VIRS
Ancillary_Data_Set = DER3/SIG4
SP_MODEL_NUM = 1
RUN_SURF_ALG = 1
PGE_VERSION = 0305
TK_Ver = SCF TK5.2.7

#####
# PCF required directories
#####
SS7.2_InputDir.TSI = /ENG/CERES/sarb/deltest/tisa_avg/data/data_7/out_comp
SS7.2_InputDir.StAncInst = /ENG/CERES/sarb/deltest/sarb/data/ancillary/static/sarb
SS7.2_InputDir.StAncSyn = /ENG/CERES/sarb/deltest/sarb/data/ancillary/static/sarbsyn
SS7.2_InputDir.AerMATCH = /ENG/CERES/sarb/deltest/sarb/data/ancillary/static/sarb
SS7.2_InputDir.DyAnc = /ENG/CERES/sarb/deltest/sarb/data/ancillary/dynamic/sarb
SS7.2_InputDir.MOA = /ENG/CERES/sarb/deltest/sarb/data/out_comp/data/regridmoa
SS7.2_OutputDir.SYN = /ENG/CERES/sarb/deltest/sarb/data/out_comp/data/sarbsyn
SS7.2_OutputDir.QC = /ENG/CERES/sarb/deltest/sarb/data/out_comp/qa_reports/sarbsyn
SS7.2_RunDir = /ENG/CERES/sarb/deltest/sarb/bin/sarbsyn
```

```
SS7.2_LogsDir = /ENG/CERES/sarb/deltest/sarb/data/runlogs/sarbsyn
SS7.2_MCFDir = /ENG/CERES/sarb/deltest/sarb/rcf/mcf/sarbsyn
SS7.2_PGSDir = /usr/local/TOOLKIT
SS7.2_SCRDir = /ENG/CERES/sarb/deltest/sarb/data/scr

#####
# Input file names
#####
SS7.2_Input.deriv = SS5_DrivTab_19990315
SS7.2_Input.sigma = SigTab_Synoptic_20030530
SS7.2_Input.igbp = IGBP_Ver3.0
SS7.2_Input.sfcalb = CER_HMPSAL_TRMM-PFM-VIRS_Edition2B_000000.199807
SS7.2_Input.tsi = CER_TSIB_TRMM-PFM-VIRS_Edition2C_000000.199807Z090
SS7.2_Input.gmod = CER_HMAER_TRMM-PFM-VIRS_Edition2B_000000.199807
SS7.2_Input.lut2 = flsa0602b_lut.2s.coef_20020913
SS7.2_Input.lut4 = flsa3_lut.4s.coef_19991215
SS7.2_Input.gfdlaer = SS5_GFDLAerClim_200006
SS7.2_Input.zjin_ocnalb = SS5_ZJin_OcnAlb_20011218
SS7.2_Input.collins = CollinsAer_1998TRMM_Ver3.0
SS7.2_Input.moa_1 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070100
SS7.2_Input.moa_2 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070106
SS7.2_Input.moa_3 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070112
SS7.2_Input.moa_4 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070118
SS7.2_Input.moa_5 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070200
SS7.2_Input.moa_6 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070206
SS7.2_Input.moa_7 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070212
SS7.2_Input.moa_8 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070218
SS7.2_Input.moa_9 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070300
SS7.2_Input.moa_10 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070306
SS7.2_Input.moa_11 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070312
SS7.2_Input.moa_12 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070318
SS7.2_Input.moa_13 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070400
SS7.2_Input.moa_14 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070406
SS7.2_Input.moa_15 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070412
SS7.2_Input.moa_16 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070418
SS7.2_Input.moa_17 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070500
SS7.2_Input.moa_18 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070506
SS7.2_Input.moa_19 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070512
SS7.2_Input.moa_20 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070518
SS7.2_Input.moa_21 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070600
SS7.2_Input.moa_22 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070606
SS7.2_Input.moa_23 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070612
SS7.2_Input.moa_24 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070618
SS7.2_Input.moa_25 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070700
SS7.2_Input.moa_26 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070706
SS7.2_Input.moa_27 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070712
```

SS7_2_Input.moa_28 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070718
SS7_2_Input.moa_29 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070800
SS7_2_Input.moa_30 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070806
SS7_2_Input.moa_31 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070812
SS7_2_Input.moa_32 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070818
SS7_2_Input.moa_33 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070900
SS7_2_Input.moa_34 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070906
SS7_2_Input.moa_35 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070912
SS7_2_Input.moa_36 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998070918
SS7_2_Input.moa_37 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071000
SS7_2_Input.moa_38 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071006
SS7_2_Input.moa_39 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071012
SS7_2_Input.moa_40 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071018
SS7_2_Input.moa_41 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071100
SS7_2_Input.moa_42 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071106
SS7_2_Input.moa_43 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071112
SS7_2_Input.moa_44 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071118
SS7_2_Input.moa_45 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071200
SS7_2_Input.moa_46 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071206
SS7_2_Input.moa_47 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071212
SS7_2_Input.moa_48 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071218
SS7_2_Input.moa_49 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071300
SS7_2_Input.moa_50 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071306
SS7_2_Input.moa_51 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071312
SS7_2_Input.moa_52 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071318
SS7_2_Input.moa_53 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071400
SS7_2_Input.moa_54 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071406
SS7_2_Input.moa_55 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071412
SS7_2_Input.moa_56 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071418
SS7_2_Input.moa_57 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071500
SS7_2_Input.moa_58 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071506
SS7_2_Input.moa_59 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071512
SS7_2_Input.moa_60 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071518
SS7_2_Input.moa_61 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071600
SS7_2_Input.moa_62 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071606
SS7_2_Input.moa_63 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071612
SS7_2_Input.moa_64 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071618
SS7_2_Input.moa_65 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071700
SS7_2_Input.moa_66 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071706
SS7_2_Input.moa_67 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071712
SS7_2_Input.moa_68 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071718
SS7_2_Input.moa_69 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071800
SS7_2_Input.moa_70 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071806
SS7_2_Input.moa_71 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071812
SS7_2_Input.moa_72 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071818
SS7_2_Input.moa_73 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071900

SS7_2_Input.moa_74 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071906
SS7_2_Input.moa_75 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071912
SS7_2_Input.moa_76 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998071918
SS7_2_Input.moa_77 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072000
SS7_2_Input.moa_78 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072006
SS7_2_Input.moa_79 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072012
SS7_2_Input.moa_80 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072018
SS7_2_Input.moa_81 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072100
SS7_2_Input.moa_82 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072106
SS7_2_Input.moa_83 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072112
SS7_2_Input.moa_84 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072118
SS7_2_Input.moa_85 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072200
SS7_2_Input.moa_86 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072206
SS7_2_Input.moa_87 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072212
SS7_2_Input.moa_88 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072218
SS7_2_Input.moa_89 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072300
SS7_2_Input.moa_90 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072306
SS7_2_Input.moa_91 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072312
SS7_2_Input.moa_92 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072318
SS7_2_Input.moa_93 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072400
SS7_2_Input.moa_94 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072406
SS7_2_Input.moa_95 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072412
SS7_2_Input.moa_96 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072418
SS7_2_Input.moa_97 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072500
SS7_2_Input.moa_98 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072506
SS7_2_Input.moa_99 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072512
SS7_2_Input.moa_100 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072518
SS7_2_Input.moa_101 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072600
SS7_2_Input.moa_102 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072606
SS7_2_Input.moa_103 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072612
SS7_2_Input.moa_104 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072618
SS7_2_Input.moa_105 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072700
SS7_2_Input.moa_106 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072706
SS7_2_Input.moa_107 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072712
SS7_2_Input.moa_108 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072718
SS7_2_Input.moa_109 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072800
SS7_2_Input.moa_110 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072806
SS7_2_Input.moa_111 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072812
SS7_2_Input.moa_112 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072818
SS7_2_Input.moa_113 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072900
SS7_2_Input.moa_114 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072906
SS7_2_Input.moa_115 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072912
SS7_2_Input.moa_116 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998072918
SS7_2_Input.moa_117 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073000
SS7_2_Input.moa_118 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073006
SS7_2_Input.moa_119 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073012

```
SS7_2_Input.moa_120 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073018
SS7_2_Input.moa_121 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073100
SS7_2_Input.moa_122 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073106
SS7_2_Input.moa_123 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073112
SS7_2_Input.moa_124 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998073118
SS7_2_Input.moa_125 = CER_MOA_CERES_ECMWF-GEOS2_013016.1998080100
```

```
#####
# Output file names
#####
```

```
SS7.2_Output.syni = CER_SYN1_TRMM-PFM-VIRS_SSIT_000000.199807Z090
SS7.2_Output.synqc = CER_KQCR_TRMM-PFM-VIRS_SSIT_000000.199807Z090
```

```
#####
# Log file names
#####
```

```
SS7.2_Logsfile.1 = CER7.2.1P1_LogStatus_TRMM-PFM-VIRS_SSIT_000000.199807Z090
SS7.2_Logsfile.2 = CER7.2.1P1_LogReport_TRMM-PFM-VIRS_SSIT_000000.199807Z090
SS7.2_Logsfile.3 = CER7.2.1P1_LogUser_TRMM-PFM-VIRS_SSIT_000000.199807Z090
```

```
#####
# Temporary file names
#####
```

```
Get_tempfile = GetAttr.temp.199807Z090
MCF_tempfile = MCFWrite.temp.199807Z090
```